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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,354	03/25/2004	Takaaki Tanaka	111988.01	5452
25944	7590	05/04/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			TON, MINH TOAN T	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/808,354

Applicant(s)

TANAKA ET AL.

Examiner

Toan Ton

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 1/076312.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Shigeta et al (US 5268781).

Shigeta discloses a manufacturing method for a substrate for a liquid crystal display device by oblique evaporation of an inorganic material on an underlayer having a gap section on the surface formed on the substrate so as to form the inorganic alignment layers, comprising the steps of (see at least Figure 2, Example 1): a first oblique evaporation step by unidirectional oblique evaporation of the inorganic material on the substrate on which the underlayer having the gap section is formed on the surface of the substrate so as to form the first inorganic oblique evaporation layer; a second oblique evaporation step by oblique evaporation of the inorganic material from at least a different azimuth angle inside the substrate from the oblique evaporation direction of the inorganic material in the first oblique evaporation step so as to form the second oblique evaporation layer in an area close to the gap section and on the first inorganic oblique evaporation layer.

Shigeta discloses a difference in angles formed between the two directions/steps of 90 degrees (see at least col. 8, lines 55-56).

Art Unit: 2871

Shigeta discloses material for the alignment layer comprising inorganic material such as silicon oxide.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (GB 1 583 176, IDS).

Johnson discloses a manufacturing method for a substrate for a liquid crystal display device by oblique evaporation of an inorganic material on an underlayer having a gap section on the surface formed on the substrate so as to form the inorganic alignment layers, comprising the steps of (see at least Figures 2-3): a first oblique evaporation step by unidirectional oblique evaporation of the inorganic material on the substrate on which the underlayer having the gap section is formed on the surface of the substrate so as to form the first inorganic oblique evaporation layer; a second oblique evaporation step by oblique evaporation of the inorganic material from at least a different azimuth angle inside the substrate from the oblique evaporation direction of the inorganic material in the first oblique evaporation step so as to form the second oblique evaporation layer in an area close to the gap section and on the first inorganic oblique evaporation layer.

Art Unit: 2871

Johnson discloses the LCD device having a deposition angle in the first oblique evaporation step of less than  $15^{\circ}$  (overlapping Applicant's claimed range of 5-10) and a deposition angle in the second oblique evaporation step of  $20^{\circ}$ - $45^{\circ}$  (overlapping Applicant's claimed range of 25-30), wherein the device yields advantages such as improved contrast. Therefore, it would have been obvious to one of ordinary skill in the art to employ a deposition angle in the first oblique evaporation step of less than  $15^{\circ}$  (overlapping Applicant's claimed range of 5-10) and a deposition angle in the second oblique evaporation step of  $20^{\circ}$ - $45^{\circ}$  (overlapping Applicant's claimed range of 25-30) for advantages such as improved contrast. Further, overlapping ranges have been held as at least obvious.

Johnson discloses the thickness of the first inorganic layer of 6 nm (within Applicant's claimed range of 5-16 nm) and the thickness of the second inorganic layer of 25 nm (within Applicant's claimed range of 10-40 nm).

Johnson discloses materials for the alignment layer comprising inorganic material such as silicon oxide.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art. Unit: 2871

***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Ton whose telephone number is (571) 272-2303.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 25, 2005

  
TOANTON  
PRIMARY EXAMINER